

SEQUENCE LISTING

<110> INCYTE PHARMACEUTICALS, INC.

LAL, Preeti

YUE, Henry

TANG, Y. Tom

HILLMAN, Jennifer L.

BAUGHN, Mariah R.

YANG, Junming

<120> CARBOHYDRATE-MODIFYING ENZYMES

<130> PF-0687 PCT

<140> To Be Assigned

<141> Herewith

<150> 60/130,383

<151> 1999-04-21

<160> 10

<170> PERL Program

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<211> 434

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 000422CD1

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Ser	Arg	Gly	Gly	Gln	Gly	Arg	Gly	Val	Glu	Lys	Pro	Pro	His	Leu
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Ala	Ala	Leu	Ile	Leu	Ala	Arg	Gly	Gly	Ser	Lys	Gly	Ile	Pro	Leu
			50						55					60
Lys	Asn	Ile	Lys	His	Leu	Ala	Gly	Val	Pro	Leu	Ile	Gly	Trp	Val
			65						70					75
Leu	Arg	Ala	Ala	Leu	Asp	Ser	Gly	Ala	Phe	Gln	Ser	Val	Trp	Val
			80						85					90
Ser	Thr	Asp	His	Asp	Glu	Ile	Glu	Asn	Val	Ala	Lys	Gln	Phe	Gly
			95						100					105
Ala	Gln	Val	His	Arg	Arg	Ser	Ser	Glu	Val	Ser	Lys	Asp	Ser	Ser
			110						115					120
Thr	Ser	Leu	Asp	Ala	Ile	Ile	Glu	Phe	Leu	Asn	Tyr	His	Asn	Glu
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Val	Asp	Ile	Val	Gly	Asn	Ile	Gln	Ala	Thr	Ser	Pro	Cys	Leu	His
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Pro	Thr	Asp	Leu	Gln	Lys	Val	Ala	Glu	Met	Ile	Arg	Glu	Glu	Gly

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Tyr Asp Ser Val Phe Ser Val Val Arg Arg His Gln Phe Arg Trp					
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Ser Glu Ile Gln Lys Gly Val Arg Glu Val Thr Glu Pro Leu Asn					
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Leu Asn Pro Ala Lys Arg Pro Arg Arg Gln Asp Trp Asp Gly Glu					
	200		205		210
Leu Tyr Glu Asn Gly Ser Phe Tyr Phe Ala Lys Arg His Leu Ile					
	215		220		225
Glu Met Gly Tyr Leu Gln Gly Gly Lys Met Ala Tyr Tyr Glu Met					
	230		235		240
Arg Ala Glu His Ser Val Asp Ile Asp Val Asp Ile Asp Trp Pro					
	245		250		255
Ile Ala Glu Gln Arg Val Leu Arg Tyr Gly Tyr Phe Gly Lys Glu					
	260		265		270
Lys Leu Lys Glu Ile Lys Leu Leu Val Cys Asn Ile Asp Gly Cys					
	275		280		285
Leu Thr Asn Gly His Ile Tyr Val Ser Gly Asp Gln Lys Glu Ile					
	290		295		300
Ile Ser Tyr Asp Val Lys Asp Ala Ile Gly Ile Ser Leu Leu Lys					
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Lys Ser Gly Ile Glu Val Arg Leu Ile Ser Glu Arg Ala Cys Ser					
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Lys Gln Thr Leu Ser Ser Leu Lys Leu Asp Cys Lys Met Glu Val					
	335		340		345
Ser Val Ser Asp Lys Leu Ala Val Val Asp Glu Trp Arg Lys Glu					
	350		355		360
Met Gly Leu Cys Trp Lys Glu Val Ala Tyr Leu Gly Asn Glu Val					
	365		370		375
Ser Asp Glu Glu Cys Leu Lys Arg Val Gly Leu Ser Gly Ala Pro					
	380		385		390
Ala Asp Ala Cys Ser Thr Ala Gln Lys Ala Val Gly Tyr Ile Cys					
	395		400		405
Lys Cys Asn Gly Gly Arg Gly Ala Ile Arg Glu Phe Ala Glu His					
	410		415		420
Ile Cys Leu Leu Met Glu Lys Val Asn Asn Ser Cys Gln Lys					
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<212> PRT

<213> Homo sapiens

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<223> Incyte ID No: 983984CD1

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Pro Leu Cys Leu Ala Thr Cys Leu Asp His His Phe Pro Thr Gly			
	35	40	45
Ser Arg Pro Thr Val Pro Gly Pro Leu His Phe Ser Gly Tyr Ser			

	50		55		60
Ser Val Pro Asp Gly	Lys Pro Leu Val Arg	Glu Pro Cys Arg Ser			
65	70	75			
Cys Ala Val Val Ser	Ser Ser Gly Gln Met	Leu Gly Ser Gly Leu			
80	85	90			
Gly Ala Glu Ile Asp	Ser Ala Glu Cys Val	Phe Arg Met Asn Gln			
95	100	105			
Ala Pro Thr Val Gly	Phe Glu Ala Asp Val	Gly Gln Arg Ser Thr			
110	115	120			
Leu Arg Val Val Ser	His Thr Ser Val Pro	Leu Leu Leu Arg Asn			
125	130	135			
Tyr Ser His Tyr Phe	Gln Lys Ala Arg Asp	Thr Leu Tyr Met Val			
140	145	150			
Trp Gly Gln Gly Arg	His Met Asp Arg Val	Leu Gly Gly Arg Thr			
155	160	165			
Tyr Arg Thr Leu Leu	Gln Leu Thr Arg Met	Tyr Pro Gly Leu Gln			
170	175	180			
Val Tyr Thr Phe Thr	Glu Arg Met Met Ala	Tyr Cys Asp Gln Ile			
185	190	195			
Phe Gln Asp Glu Thr	Gly Lys Asn Arg Arg	Gln Ser Gly Ser Phe			
200	205	210			
Leu Ser Thr Gly Trp	Phe Thr Met Ile Leu	Ala Leu Glu Leu Cys			
215	220	225			
Glu Glu Ile Val Val	Tyr Gly Met Val Ser	Asp Ser Tyr Cys Arg			
230	235	240			
Glu Lys Ser His Pro	Ser Val Pro Tyr His	Tyr Phe Glu Lys Gly			
245	250	255			
Arg Leu Asp Glu Cys	Gln Met Tyr Leu Ala	His Glu Gln Ala Pro			
260	265	270			
Arg Ser Ala His Arg	Phe Ile Thr Glu Lys	Ala Val Phe Ser Arg			
275	280	285			
Trp Ala Lys Lys Arg	Pro Ile Val Phe Ala	His Pro Ser Trp Arg			
290	295	300			

Thr Glu

<210> 3

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<212> PRT

<213> Homo_sapiens

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<221> misc_feature

<223> Incyte ID No: 2210054CD1

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20	25	30			
Asp Pro Ala His Tyr	Arg Glu Arg Val Lys	Ala Met Phe Tyr His			
35	40	45			
Ala Tyr Asp Ser Tyr	Leu Glu Asn Ala Phe	Pro Phe Asp Glu Leu			
50	55	60			
Arg Pro Leu Thr Cys	Asp Gly His Asp Thr	Trp Gly Ser Phe Ser			
65	70	75			

Leu Thr Leu Ile Asp Ala Leu Asp Thr Leu Leu Ile Leu Gly Asn	80	85	90
Val Ser Glu Phe Gln Arg Val Val Glu Val Leu Gln Asp Ser Val	95	100	105
Asp Phe Asp Ile Asp Val Asn Ala Ser Val Phe Glu Thr Asn Ile	110	115	120
Arg Val Val Gly Gly Leu Leu Ser Ala His Leu Leu Ser Lys Lys	125	130	135
Ala Gly Val Glu Val Glu Ala Gly Trp Pro Cys Ser Gly Pro Leu	140	145	150
Leu Arg Met Ala Glu Glu Ala Ala Arg Lys Leu Leu Pro Ala Phe	155	160	165
Gln Thr Pro Thr Gly Met Pro Tyr Gly Thr Val Asn Leu Leu His	170	175	180
Gly Val Asn Pro Gly Glu Thr Pro Val Thr Cys Thr Ala Gly Ile	185	190	195
Gly Thr Phe Ile Val Glu Phe Ala Thr Leu Ser Ser Leu Thr Gly	200	205	210
Asp Pro Val Phe Glu Asp Val Ala Arg Val Ala Leu Met Arg Leu	215	220	225
Trp Glu Ser Arg Ser Asp Ile Gly Leu Val Gly Asn His Ile Asp	230	235	240
Val Leu Thr Gly Lys Trp Val Ala Gln Asp Ala Gly Ile Gly Ala	245	250	255
Gly Val Asp Ser Tyr Phe Glu Tyr Leu Val Lys Gly Ala Ile Leu	260	265	270
Leu Gln Asp Lys Lys Leu Met Ala Met Phe Leu Glu Tyr Asn Lys	275	280	285
Ala Ile Arg Asn Tyr Thr Arg Phe Asp Asp Trp Tyr Leu Trp Val	290	295	300
Gln Met Tyr Lys Gly Thr Val Ser Met Pro Val Phe Gln Ser Leu	305	310	315
Glu Ala Tyr Trp Pro Gly Leu Gln Ser Leu Ile Gly Asp Ile Asp	320	325	330
Asn Ala Met Arg Thr Phe Leu Asn Tyr Tyr Thr Val Trp Lys Gln	335	340	345
Phe Gly Gly Leu Pro Glu Phe Tyr Asn Ile Pro Gln Gly Tyr Thr	350	355	360
Val Glu Lys Arg Glu Gly Tyr Pro Leu Arg Pro Glu Leu Ile Glu	365	370	375
Ser Ala Met Tyr Leu Tyr Arg Ala Thr Gly Asp Pro Thr Leu Leu	380	385	390
Glu Leu Gly Arg Asp Ala Val Glu Ser Ile Glu Lys Ile Ser Lys	395	400	405
Val Glu Cys Gly Phe Ala Thr Ile Lys Asp Leu Arg Asp His Lys	410	415	420
Leu Asp Asn Arg Met Glu Ser Phe Phe Leu Ala Glu Thr Val Lys	425	430	435
Tyr Leu Tyr Leu Leu Phe Asp Pro Thr Asn Phe Ile His Asn Asn	440	445	450
Gly Ser Thr Phe Asp Thr Val Ile Thr Pro Tyr Gly Glu Cys Ile	455	460	465
Leu Gly Ala Gly Gly Tyr Ile Phe Asn Thr Glu Ala His Pro Ile	470	475	480
Asp Pro Ala Ala Leu His Cys Cys Gln Arg Leu Lys Glu Glu Gln	485	490	495

Trp	Glu	Val	Glu	Asp	Leu	Met	Arg	Glu	Phe	Tyr	Ser	Leu	Lys	Arg	500	505	510
Ser	Arg	Ser	Lys	Phe	Gln	Lys	Asn	Thr	Val	Ser	Ser	Gly	Pro	Trp	515	520	525
Glu	Pro	Pro	Ala	Arg	Pro	Gly	Thr	Leu	Phe	Ser	Pro	Glu	Asn	His	530	535	540
Asp	Gln	Ala	Arg	Glu	Arg	Lys	Pro	Ala	Lys	Gln	Lys	Val	Pro	Leu	545	550	555
Leu	Ser	Cys	Pro	Ser	Gln	Pro	Phe	Thr	Ser	Lys	Leu	Ala	Leu	Leu	560	565	570
Gly	Gln	Val	Phe	Leu	Asp	Ser	Ser								575		

<210> 4

<211> 461

<212> PRT

<213> Homo sapiens

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Gly	Gly	Glu	Arg	Val	Phe	Lys	Asn	Gln	Thr	Gly	Asp	Val	Ala	Cys	35	40	45	
Gly	Ser	Tyr	Thr	Leu	Trp	Glu	Glu	Asp	Leu	Lys	Cys	Ile	Lys	Gln	50	55	60	
Leu	Gly	Leu	Thr	His	Tyr	Arg	Phe	Ser	Leu	Ser	Trp	Ser	Arg	Leu	65	70	75	
Leu	Pro	Asp	Gly	Thr	Thr	Gly	Phe	Ile	Asn	Gln	Lys	Gly	Ile	Asp	80	85	90	
Tyr	Tyr	Asn	Lys	Ile	Ile	Asp	Asp	Leu	Leu	Lys	Asn	Gly	Val	Thr	95	100	105	
Pro	Ile	Val	Thr	Leu	Tyr	His	Phe	Asp	Leu	Pro	Gln	Thr	Leu	Glu	110	115	120	
Asp	Gln	Gly	Gly	Trp	Leu	Ser	Glu	Ala	Ile	Ile	Glu	Ser	Phe	Asp	125	130	135	
Lys	Tyr	Ala	Gln	Phe	Cys	Phe	Ser	Thr	Phe	Gly	Asp	Arg	Val	Lys	140	145	150	
Gln	Trp	Ile	Thr	Ile	Asn	Glu	Ala	Asn	Val	Leu	Ser	Val	Met	Ser	155	160	165	
Tyr	Asp	Leu	Gly	Met	Phe	Pro	Pro	Gly	Ile	Pro	His	Phe	Gly	Thr	170	175	180	
Gly	Gly	Tyr	Gln	Ala	Ala	His	Asn	Leu	Ile	Lys	Ala	His	Ala	Arg	185	190	195	
Ser	Trp	His	Ser	Tyr	Asp	Ser	Leu	Phe	Arg	Lys	Lys	Gln	Lys	Gly	200	205	210	
Met	Val	Ser	Leu	Ser	Leu	Phe	Ala	Val	Trp	Leu	Glu	Pro	Ala	Asp	215	220	225	
Pro	Asn	Ser	Val	Ser	Asp	Gln	Glu	Ala	Ala	Lys	Arg	Ala	Ile	Thr	230	235	240	

Phe	His	Leu	Asp	Leu	Phe	Ala	Lys	Pro	Ile	Phe	Ile	Asp	Gly	Asp
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Tyr	Pro	Glu	Val	Val	Lys	Ser	Gln	Ile	Ala	Ser	Met	Ser	Gln	Lys
				260					265					270
Gln	Gly	Tyr	Pro	Ser	Ser	Arg	Leu	Pro	Glu	Phe	Thr	Glu	Glu	Glu
				275					280					285
Lys	Lys	Met	Ile	Lys	Gly	Thr	Ala	Asp	Phe	Phe	Ala	Val	Gln	Tyr
				290					295					300
Tyr	Thr	Thr	Arg	Leu	Ile	Lys	Tyr	Gln	Glu	Asn	Lys	Lys	Gly	Glu
				305					310					315
Leu	Gly	Ile	Leu	Gln	Asp	Ala	Glu	Ile	Glu	Phe	Phe	Pro	Asp	Pro
				320					325					330
Ser	Trp	Lys	Asn	Val	Asp	Trp	Ile	Tyr	Val	Val	Pro	Trp	Gly	Val
				335					340					345
Cys	Lys	Leu	Leu	Lys	Tyr	Ile	Lys	Asp	Thr	Tyr	Asn	Asn	Pro	Val
				350					355					360
Ile	Tyr	Ile	Thr	Glu	Asn	Gly	Phe	Pro	Gln	Ser	Asp	Pro	Ala	Pro
				365					370					375
Leu	Asp	Asp	Thr	Gln	Arg	Trp	Glu	Tyr	Phe	Arg	Gln	Thr	Phe	Gln
				380					385					390
Glu	Leu	Phe	Lys	Ala	Ile	Gln	Leu	Asp	Lys	Val	Asn	Leu	Gln	Val
				395					400					405
Tyr	Cys	Ala	Trp	Ser	Leu	Leu	Asp	Asn	Phe	Glu	Trp	Asn	Gln	Gly
				410					415					420
Tyr	Ser	Ser	Arg	Phe	Gly	Leu	Phe	His	Val	Asp	Phe	Glu	Asp	Pro
				425					430					435
Ala	Arg	Pro	Arg	Val	Pro	Tyr	Thr	Ser	Ala	Lys	Glu	Tyr	Ala	Lys
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<212> PRT
<213> Homo sapiens
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				20					25					30
Thr	Glu	Phe	Ser	His	Trp	Met	Asn	Ile	Lys	Thr	Ile	Leu	Asp	Glu
				35					40					45
Leu	Val	Gln	Arg	Gly	His	Glu	Val	Thr	Val	Leu	Ala	Ser	Ser	Ala
				50					55					60
Ser	Ile	Ser	Phe	Asp	Pro	Asn	Ser	Pro	Ser	Thr	Leu	Lys	Phe	Glu
				65					70					75
Val	Tyr	Pro	Val	Ser	Leu	Thr	Lys	Thr	Glu	Phe	Glu	Asp	Ile	Ile
				80					85					90
Lys	Gln	Leu	Val	Lys	Arg	Trp	Ala	Glu	Leu	Pro	Lys	Asp	Thr	Phe
				95					100					105

Trp Ser Tyr Phe Ser Gln Val Gln Glu Ile Met Trp Thr Phe Asn	110	115	120
Asp Ile Leu Arg Lys Phe Cys Lys Asp Ile Val Ser Asn Lys Lys	125	130	135
Leu Met Lys Lys Leu Gln Glu Ser Arg Phe Asp Val Val Leu Ala	140	145	150
Asp Ala Val Phe Pro Phe Gly Glu Leu Leu Ala Glu Leu Leu Lys	155	160	165
Ile Pro Phe Val Tyr Ser Leu Arg Phe Ser Pro Gly Tyr Ala Ile	170	175	180
Glu Lys His Ser Gly Gly Leu Leu Phe Pro Pro Ser Tyr Val Pro	185	190	195
Val Val Met Ser Glu Leu Ser Asp Gln Met Thr Phe Ile Glu Arg	200	205	210
Val Lys Asn Met Ile Tyr Val Leu Tyr Phe Glu Phe Trp Phe Gln	215	220	225
Ile Phe Asp Met Lys Lys Trp Asp Gln Phe Tyr Ser Glu Val Leu	230	235	240
Gly Arg Pro Thr Thr Leu Ser Glu Thr Met Ala Lys Ala Asp Ile	245	250	255
Trp Leu Ile Arg Asn Tyr Trp Asp Phe Gln Phe Pro His Pro Leu	260	265	270
Leu Pro Asn Val Glu Phe Val Gly Gly Leu His Cys Lys Pro Ala	275	280	285
Lys Pro Leu Pro Lys Glu Met Glu Glu Phe Val Gln Ser Ser Gly	290	295	300
Glu Asn Gly Val Val Val Phe Ser Leu Gly Ser Met Val Ser Asn	305	310	315
Thr Ser Glu Glu Arg Ala Asn Val Ile Ala Ser Ala Leu Ala Lys	320	325	330
Ile Pro Gln Lys Val Leu Trp Arg Phe Asp Gly Asn Lys Pro Asp	335	340	345
Thr Leu Gly Leu Asn Thr Arg Leu Tyr Lys Trp Ile Pro Gln Asn	350	355	360
Asp Leu Leu Gly His Pro Lys Thr Lys Ala Phe Ile Thr His Gly	365	370	375
Gly Met Asn Gly Ile Tyr Glu Ala Ile Tyr His Gly Val Pro Met	380	385	390
Val Gly Val Pro Ile Phe Gly Asp Gln Leu Asp Asn Ile Ala His	395	400	405
Met Lys Ala Lys Gly Ala Ala Val Glu Ile Asn Phe Lys Thr Met	410	415	420
Thr Ser Glu Asp Leu Leu Arg Ala Leu Arg Thr Val Ile Thr Asp	425	430	435
Ser Ser Tyr Lys Glu Asn Ala Met Arg Leu Ser Arg Ile His His	440	445	450
Asp Gln Pro Val Lys Pro Leu Asp Arg Ala Val Phe Trp Ile Glu	455	460	465
Phe Val Met Arg His Lys Gly Ala Lys His Leu Arg Ser Ala Ala	470	475	480
His Asp Leu Thr Trp Phe Gln His Tyr Ser Ile Asp Val Ile Gly	485	490	495
Phe Leu Leu Thr Cys Val Ala Thr Ala Ile Phe Leu Phe Thr Lys	500	505	510
Cys Phe Leu Phe Ser Cys Gln Lys Phe Asn Lys Thr Arg Lys Ile	515	520	525

Glu Lys Arg Glu

<210> 6
<211> 1772
<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<221> unsure
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<223> a or g or c or t, unknown, or other

<220>

<221> misc_feature

<223> Incyte ID No: 983984CB1

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<210> 8

<211> 1889

<212> DNA

<213> Homo sapiens

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<221> misc_feature

<223> Incyte ID No: 2210054CB1

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